[5164C] Gold Medal with VR Skills

Team Name/Number: **Marquez GOLD / 5164C**

Team Members: **Allie, Elliot, Olivia, and Tristan**

Team Location: **Pacific Palisades, California**

Student Name: Marquez Gold - 5164C

Assignment: Allie Orief, Elliot Gottlieb, Tristan Oles, and Olivia Lam

Notes: Team Location: Pacific Palisades, California

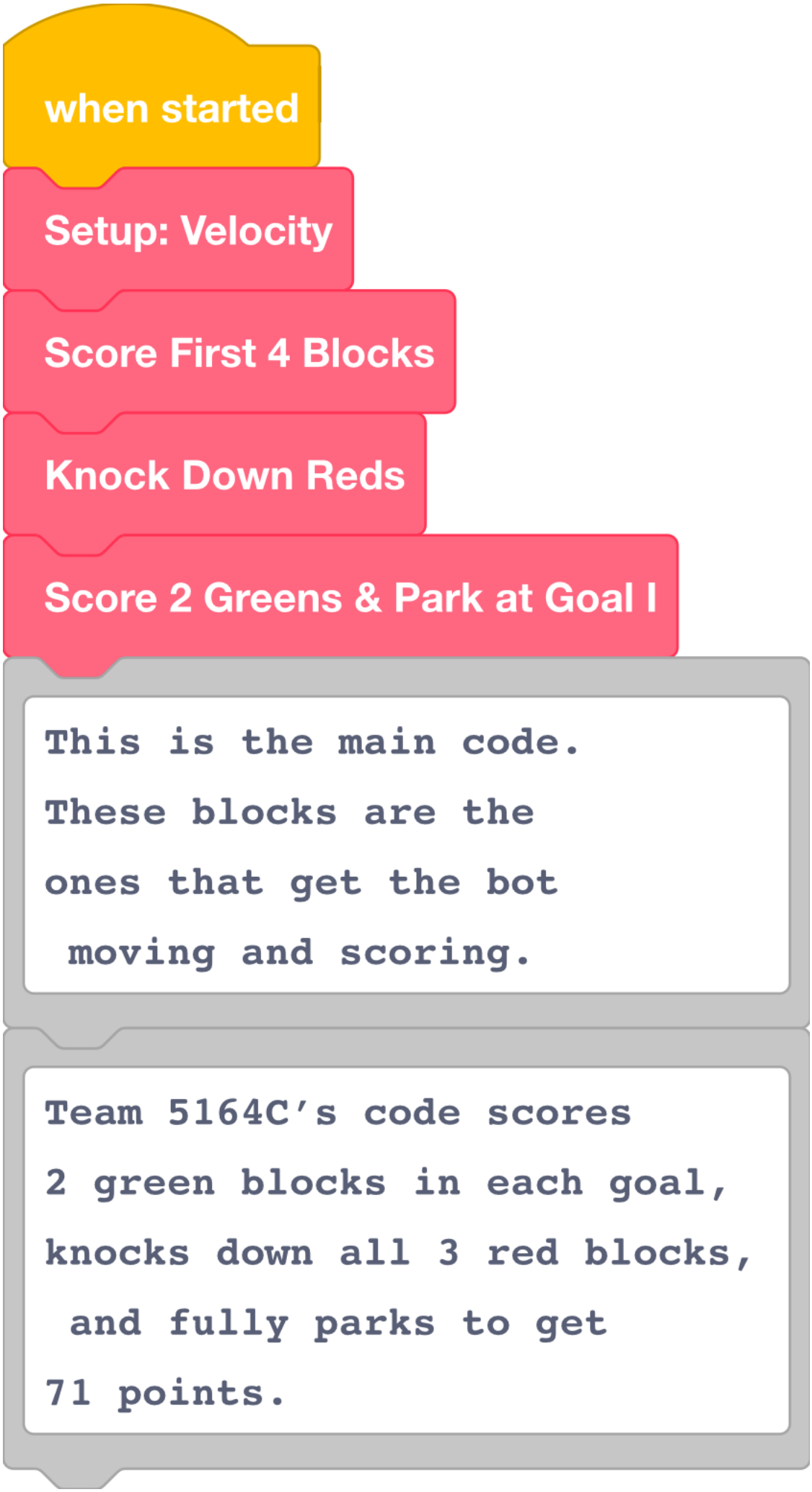
Playground: VIQC Virtual Skills - Full Volume

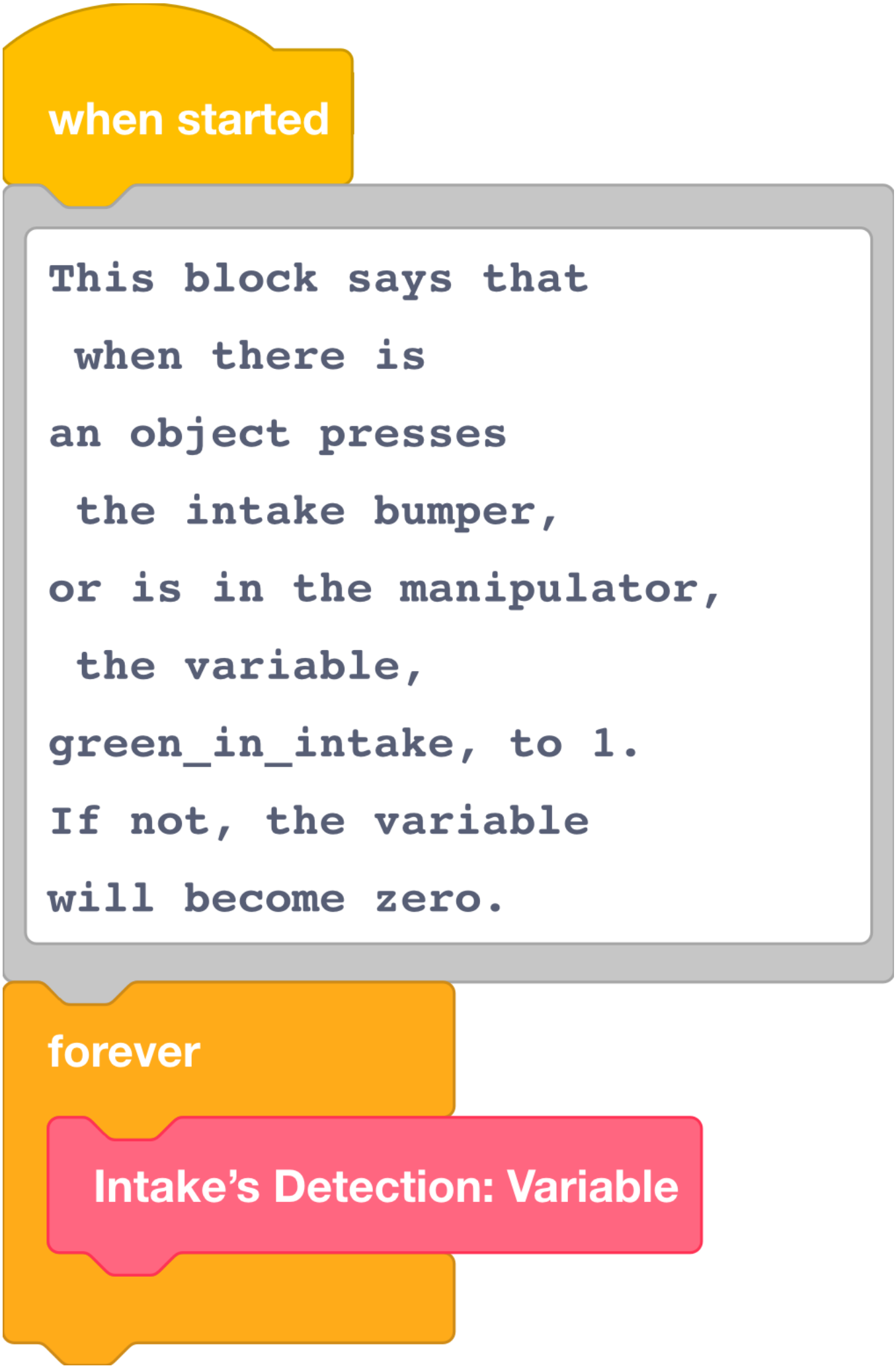
Project Name: 5164C Final Code

Project Type: Blocks

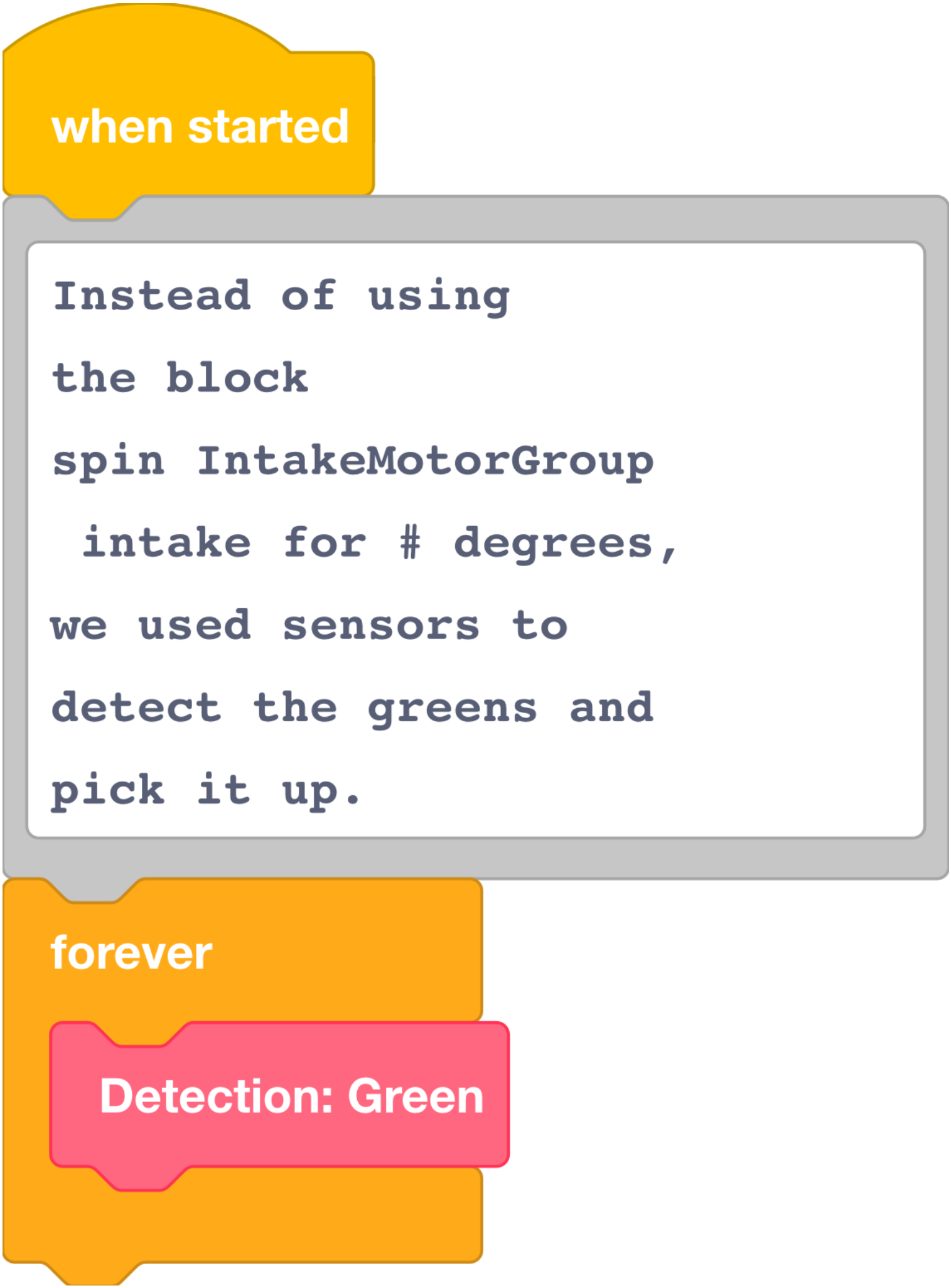
Date: Sat Jan 20 2024

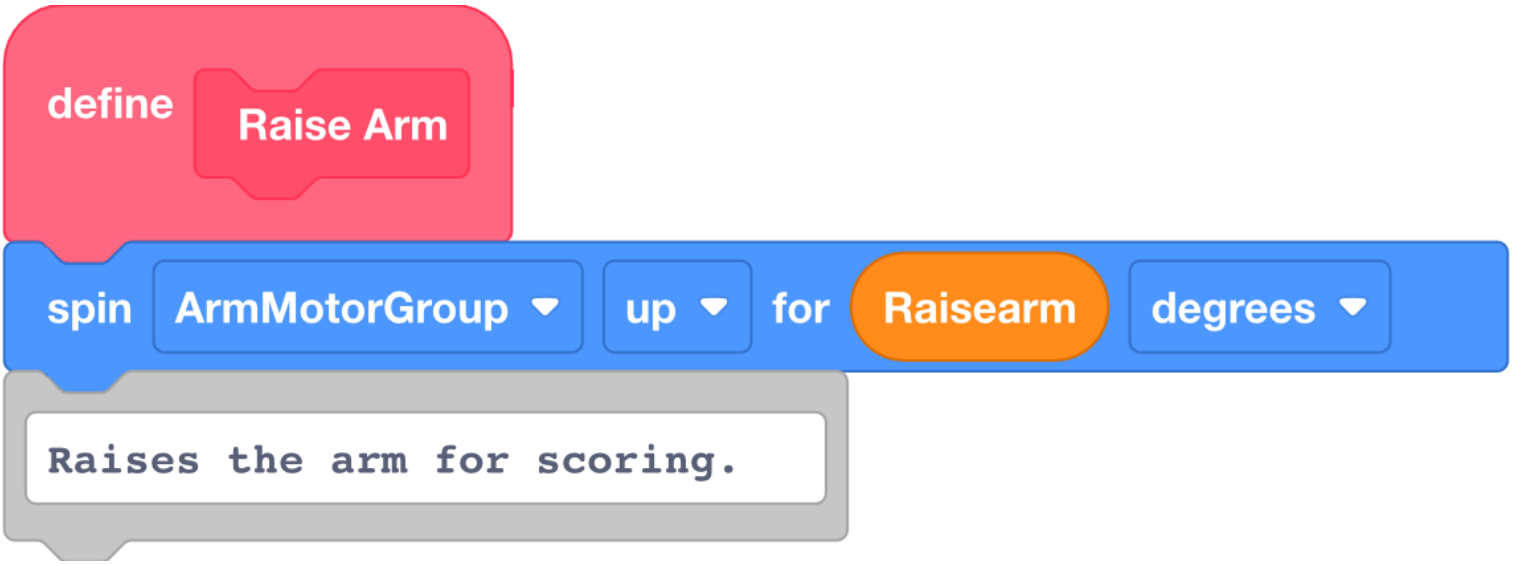

when started
Setup: Velocity
Score First 4 Blocks
Knock Down Reds
Score 2 Greens & Park at Goal I
This is the main code. These blocks are the ones that get the bot moving and scoring.
Team 5164C's code scores 2 green blocks in each goal, knocks down all 3 red blocks, and fully parks to get 71 points.
when started
This block says that when there is an object presses the intake bumper, or is in the manipulator, the variable, green_in_intake, to 1. If not, the variable will become zero.
forever
Intake's Detection: Variable
when started
This block uses variables to say when there isn't a block in the intake, it would pick up a green if it was in front of the green.
forever
Time for Waiting: Green
when started
Instead of using the block spin IntakeMotorGroup intake for # degrees, we used sensors to detect the greens and pick it up.
forever
Detection: Green
define Setup: Velocity
set green_in_intake to 0
set Turnthirty to 30
set Raisearm to 280
set Halfa to 0.5
set drive velocity to 100000 %
set turn velocity to 100 %
set IntakeMotorGroup velocity to 100 %
set ArmMotorGroup velocity to 100 %
Sets the velocity and changes variables to zero at the beginning of the code.
define Detection: Green
if FrontOptical detects green ? then
spin IntakeMotorGroup intake for 90 degrees
wait until green_in_intake < 1
wait 1 seconds
Instead of using the block, spin IntakeMotorGroup for # degrees, we used sensors to detect the greens and pick it up.
define Intake's Detection: Variable
if IntakeBumper pressed? then
change green_in_intake by 1
else
set green_in_intake to 0
This block says that when there is an object that presses the IntakeBumper, or is in the manipulator, the variable, green_in_intake will be changed by 1. If not, the variable will become zero.
define Time for Waiting: Green
if not green_in_intake = 1 then
Detection: Green
This block uses variables to say when there isn't a block in the manipulator, it would pick up a green block if it was in front of the Optical Sensor.
define Raise Arm
spin ArmMotorGroup up for Raisearm degrees
Raises the arm for scoring.
define Lower Arm
spin ArmMotorGroup down for Raisearm degrees
Lowers arm from scoring.
define Get Blocks, Return to Position mm
drive forward for mm mm
wait 0.5 seconds
drive reverse for mm mm
Makes it so the bot goes backward the same distance it went forward.
define Turn & Score
turn left for 110 degrees
Raise Arm and Outtake
wait 1 seconds
drive forward for 10 mm
turn right for 110 degrees
Lower Arm
drive reverse for 10 mm
This block is only for Goal II. It makes the bot turn, empty any blocks in the intake, and then returns to its original position before it ran the block.
define Raise Arm and Outtake
spin ArmMotorGroup up for Raisearm degrees
drive forward for 10 mm
spin IntakeMotorGroup outtake for 90 degrees
Raises the arm to score and outtakes any blocks in the manipulator.
define Score First 4 Blocks
Get Blocks, Return to Position 150
Turn & Score
Get Blocks, Return to Position 200
Turn & Score
Scored 2 Blocks in Goal II
drive forward for 870 mm
Drives to Goal III while pushing blocks
turn left for Turnthirty degrees
drive forward for 340 mm
spin ArmMotorGroup up for 10 degrees
Raise Arm
spin IntakeMotorGroup outtake for 90 degrees
wait 0.8 seconds
Lower Arm
Scored Block 1
drive reverse for 200 mm
turn right for 60 degrees
drive forward for 400 mm
wait Halfa seconds
drive reverse for 400 mm
turn left for 60 degrees
drive forward for 200 mm
Raise Arm and Outtake
wait 0.1 seconds
Lower Arm
Done scoring in both Goals II & III
define Knock Down Reds
spin ArmMotorGroup down for 20 degrees
turn right for 120 degrees
drive forward for 210 mm
wait Halfa seconds
drive reverse for 210 mm
First Red Down
turn right for 35 degrees
drive forward for 300 mm
turn left for 35 degrees
drive forward for 610 mm
turn left for 35 degrees
wait Halfa seconds
drive forward for 10 mm
Second Red Down
drive forward for 10 mm
turn right for 125 degrees
drive forward for 500 mm
turn right for Turnthirty degrees
wait 0.1 seconds
turn left for Turnthirty degrees
Last Red Down
drive reverse for 200 mm
In position for next piece of code
define Score 2 Greens & Park at Goal I
turn left for 90 degrees
drive forward for 1100 mm
Turns and drives to Goal I
Raise Arm
turn left for Turnthirty degrees
drive forward for 20 mm
spin IntakeMotorGroup outtake for 110 degrees
First block scored
drive forward for 10 mm
wait 1 seconds
drive reverse for 200 mm
Lower Arm
turn to heading 0 degrees
turn left for 15 degrees
drive forward for 150 mm
wait 0.3 seconds
drive reverse for 150 mm
turn right for 115 degrees
drive forward for 200 mm
Raise Arm and Outtake
Second Block scored
Lower Arm
drive reverse for 100 mm
turn to heading 0 degrees
turn right for 25 degrees
drive forward for 600 mm
spin ArmMotorGroup up for 150 degrees
drive forward for 700 mm
Fully parked

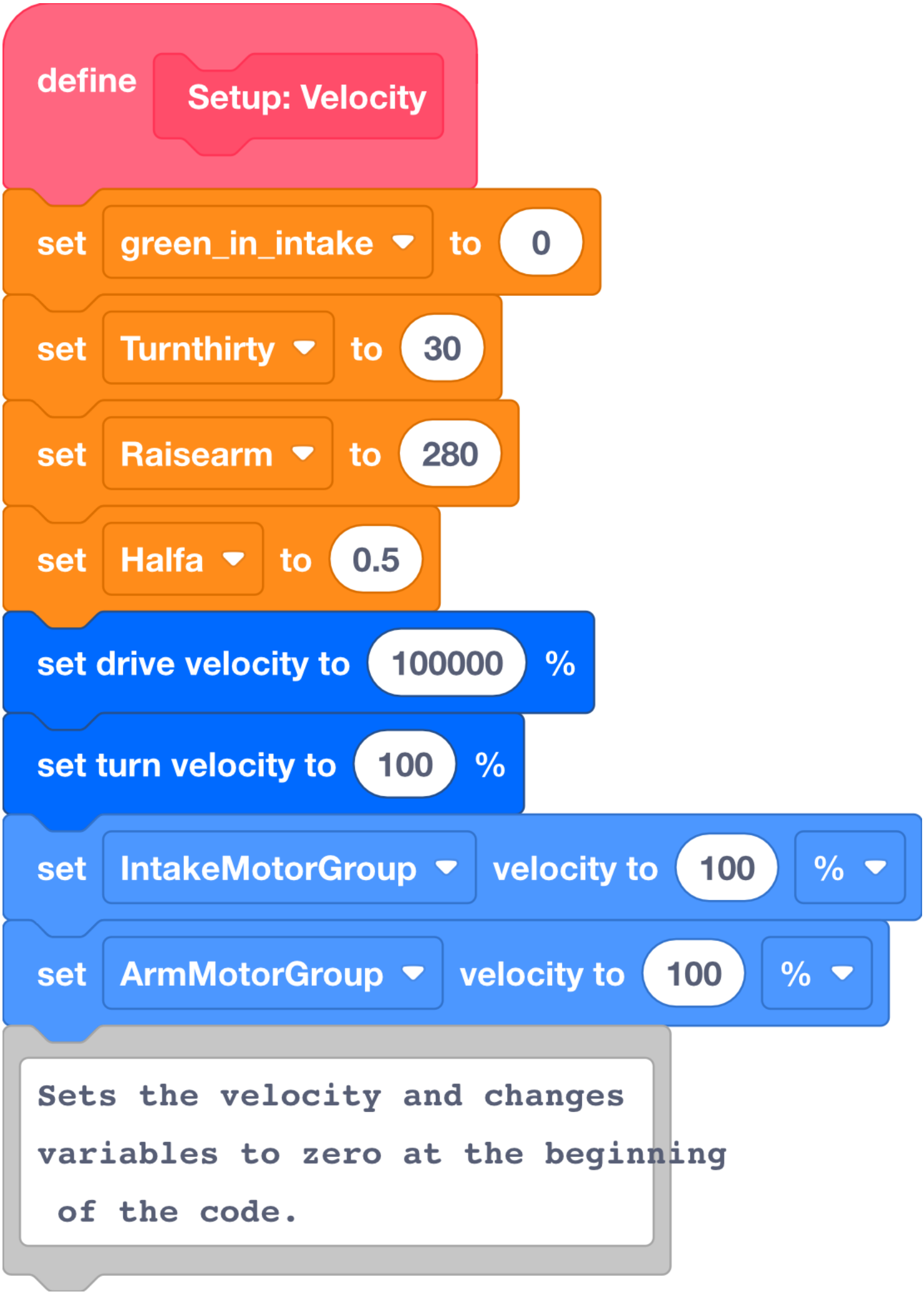

when started
Setup: Velocity
Score First 4 Blocks
Knock Down Reds
Score 2 Greens & Park at Goal I
This is the main code.
These blocks are the
ones that get the bot
moving and scoring.
Team 5164C's code scores
2 green blocks in each goal,
knocks down all 3 red blocks,
and fully parks to get
71 points.

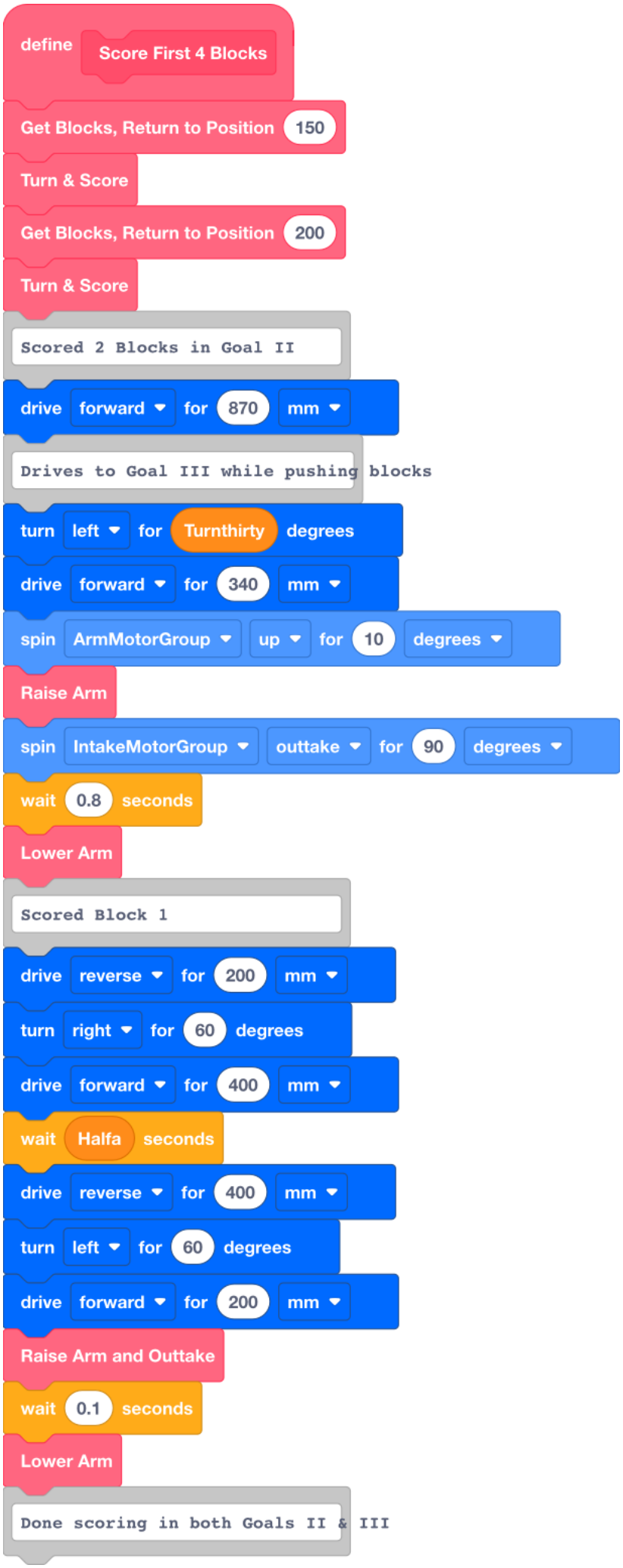

when started
This block says that
when there is
an object presses
the intake bumper,
or is in the manipulator,
the variable,
green_in_intake, to 1.
If not, the variable
will become zero.
forever
Intake's Detection: Variable

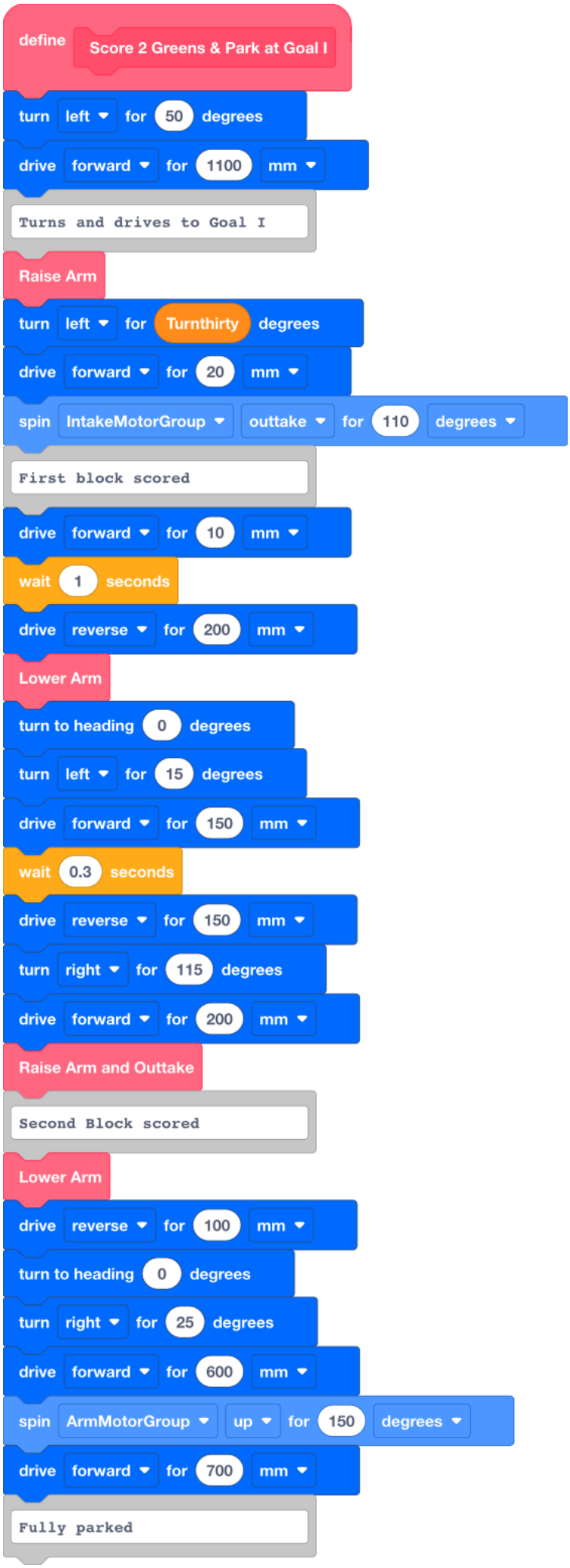

when started
This block uses variables to say when there isn't a block in the intake, it would pick up a green if it was in front of the green.
forever
Time for Waiting: Green

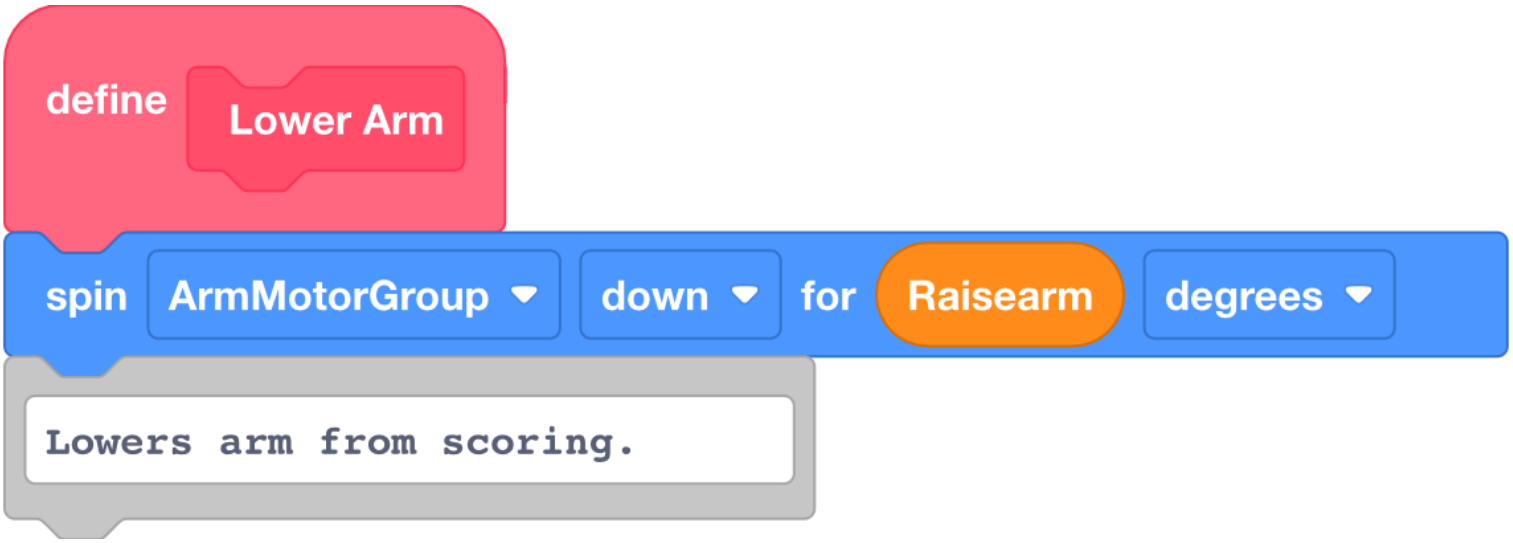

when started
Instead of using the block spin IntakeMotorGroup intake for # degrees, we used sensors to detect the greens and pick it up.
forever
Detection: Green

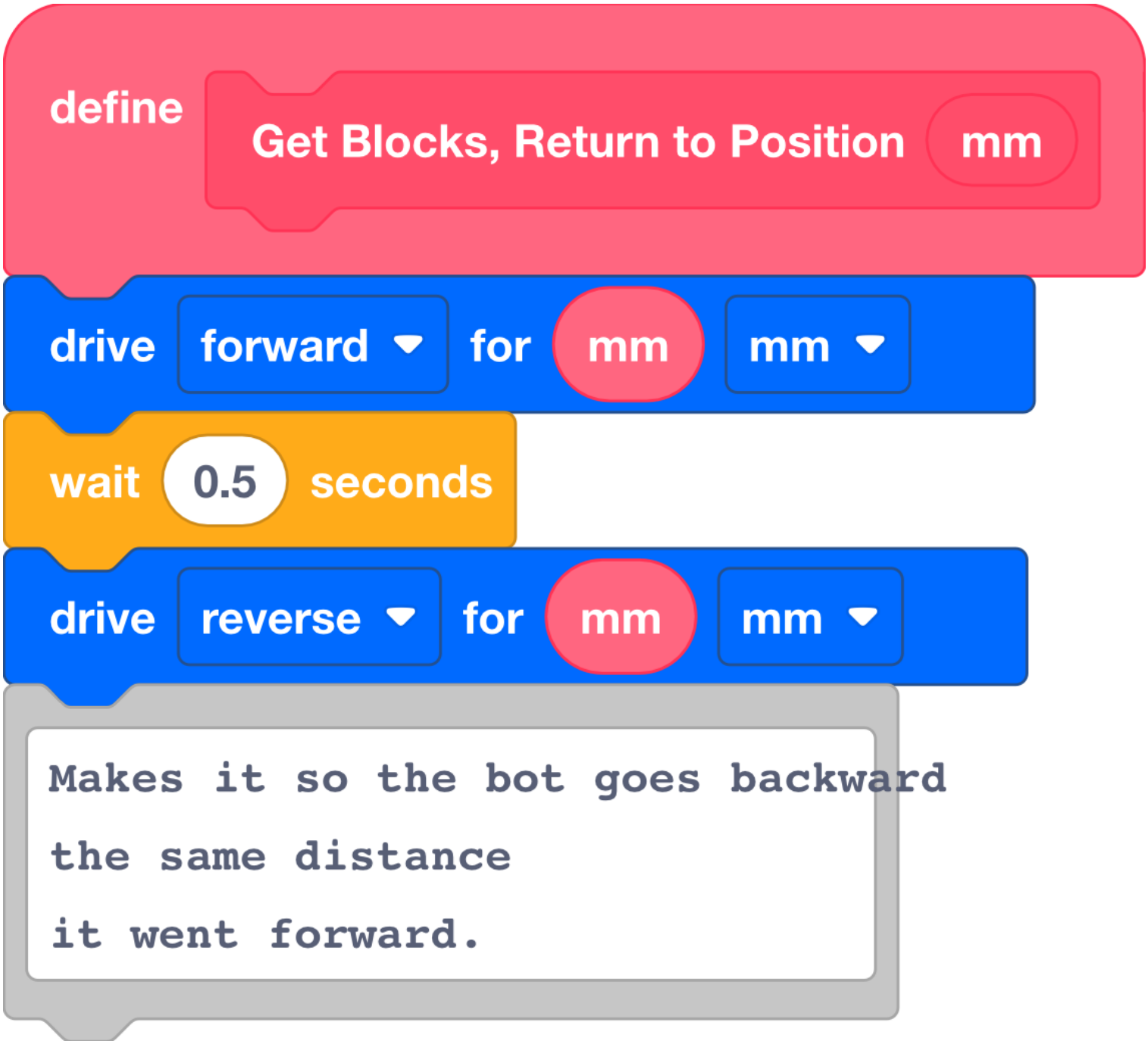

define
Raise Arm
spin
ArmMotorGroup
up
for
Raisearm
degrees
Raises the arm for scoring.

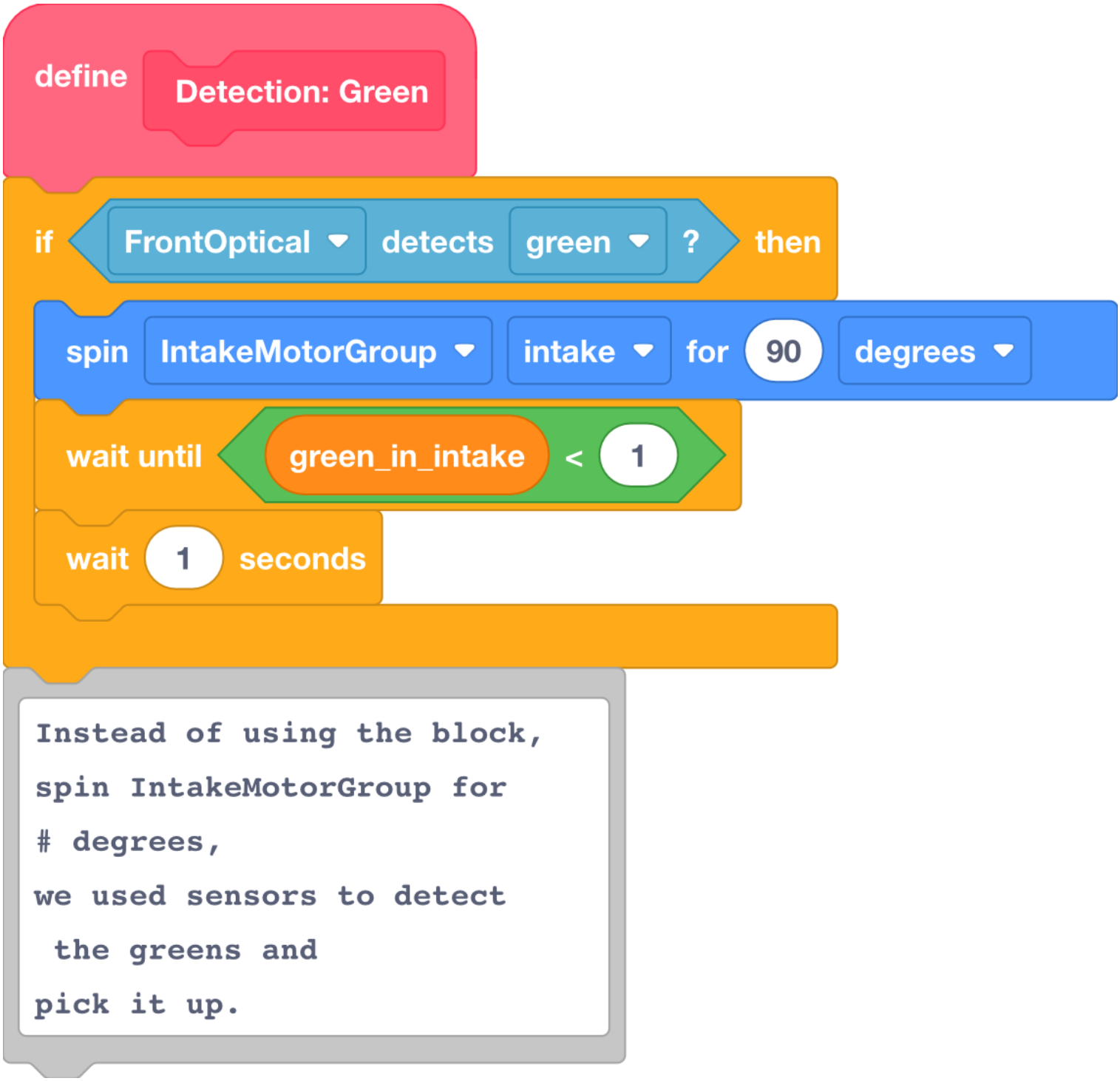

define
Setup: Velocity
set green_in_intake to 0
set Turnthirty to 30
set Raisearm to 280
set Halfa to 0.5
set drive velocity to 100000 %
set turn velocity to 100 %
set IntakeMotorGroup velocity to 100 %
set ArmMotorGroup velocity to 100 %
Sets the velocity and changes variables to zero at the beginning of the code.

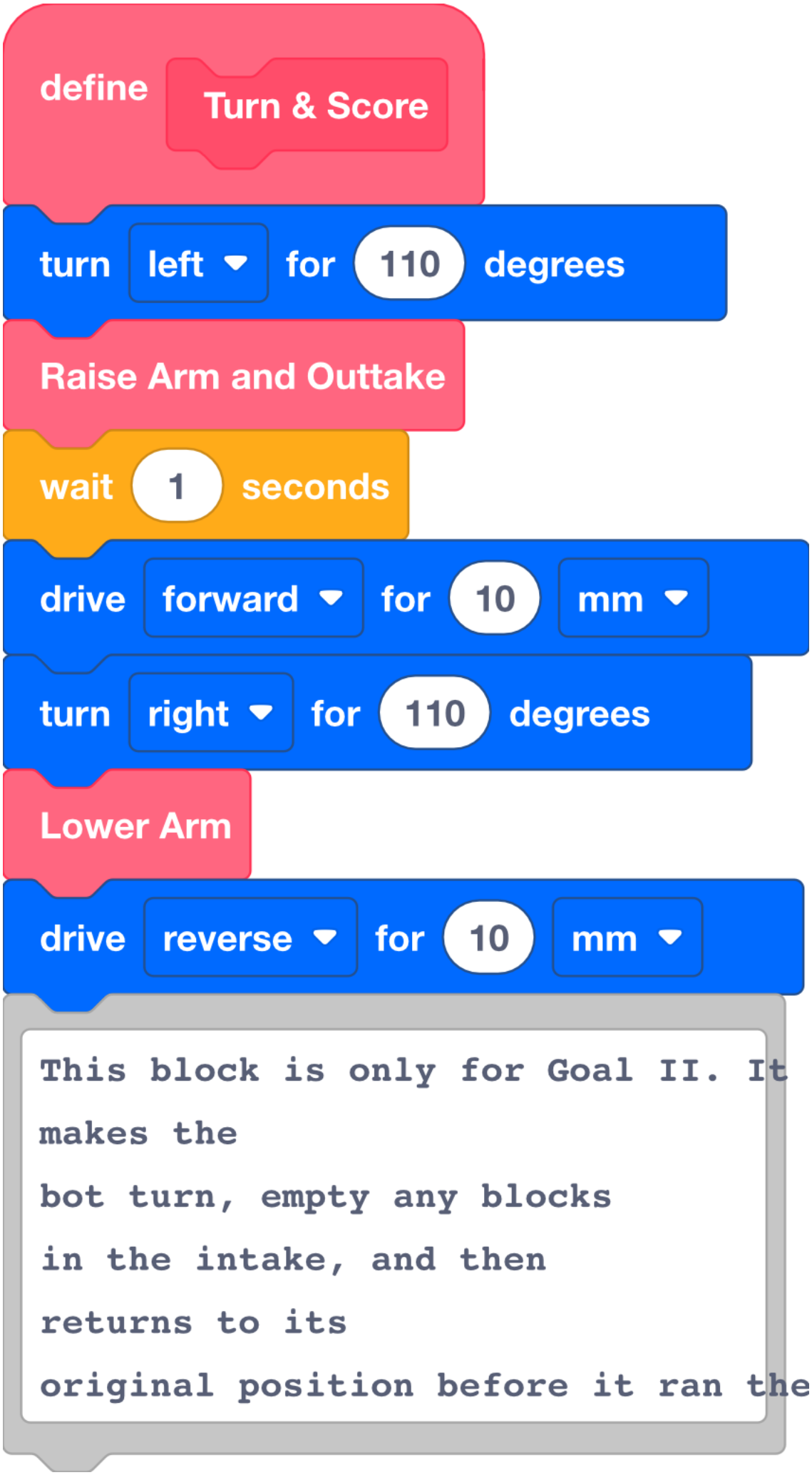

define
Score First 4 Blocks
Get Blocks, Return to Position
150
Turn & Score
Get Blocks, Return to Position
200
Turn & Score
Scored 2 Blocks in Goal II
drive
forward
for
870
mm
Drives to Goal III while pushing blocks
turn
left
for
Turnthirty
degrees
drive
forward
for
340
mm
spin
ArmMotorGroup
up
for
10
degrees
Raise Arm
spin
IntakeMotorGroup
outtake
for
90
degrees
wait
0.8
seconds
Lower Arm
Scored Block 1
drive
reverse
for
200
mm
turn
right
for
60
degrees
drive
forward
for
400
mm
wait
Halfa
seconds
drive
reverse
for
400
mm
turn
left
for
60
degrees
drive
forward
for
200
mm
Raise Arm and Outtake
wait
0.1
seconds
Lower Arm
Done scoring in both Goals II & III


define
Score 2 Greens & Park at Goal I
turn left for 50 degrees
drive forward for 1100 mm
Turns and drives to Goal I
Raise Arm
turn left for Turnthirty degrees
drive forward for 20 mm
spin IntakeMotorGroup outtake for 110 degrees
First block scored
drive forward for 10 mm
wait 1 seconds
drive reverse for 200 mm
Lower Arm
turn to heading 0 degrees
turn left for 15 degrees
drive forward for 150 mm
wait 0.3 seconds
drive reverse for 150 mm
turn right for 115 degrees
drive forward for 200 mm
Raise Arm and Outtake
Second Block scored
Lower Arm
drive reverse for 100 mm
turn to heading 0 degrees
turn right for 25 degrees
drive forward for 600 mm
spin ArmMotorGroup up for 150 degrees
drive forward for 700 mm
Fully parked


define
Lower Arm
spin
ArmMotorGroup
down
for
Raisearm
degrees
Lowers arm from scoring.


define
Get Blocks, Return to Position
mm
drive
forward
for
mm
mm
wait
0.5
seconds
drive
reverse
for
mm
mm
Makes it so the bot goes backward
the same distance
it went forward.


define
Detection: Green
if
FrontOptical
detects
green
?
then
spin
IntakeMotorGroup
intake
for
90
degrees
wait until
green_in_intake
<
1
wait
1
seconds
Instead of using the block,
spin IntakeMotorGroup for
degrees,
we used sensors to detect
the greens and
pick it up.


define
Turn & Score
turn
left
for
110
degrees
Raise Arm and Outtake
wait
1
seconds
drive
forward
for
10
mm
turn
right
for
110
degrees
Lower Arm
drive
reverse
for
10
mm
This block is only for Goal II. It
makes the
bot turn, empty any blocks
in the intake, and then
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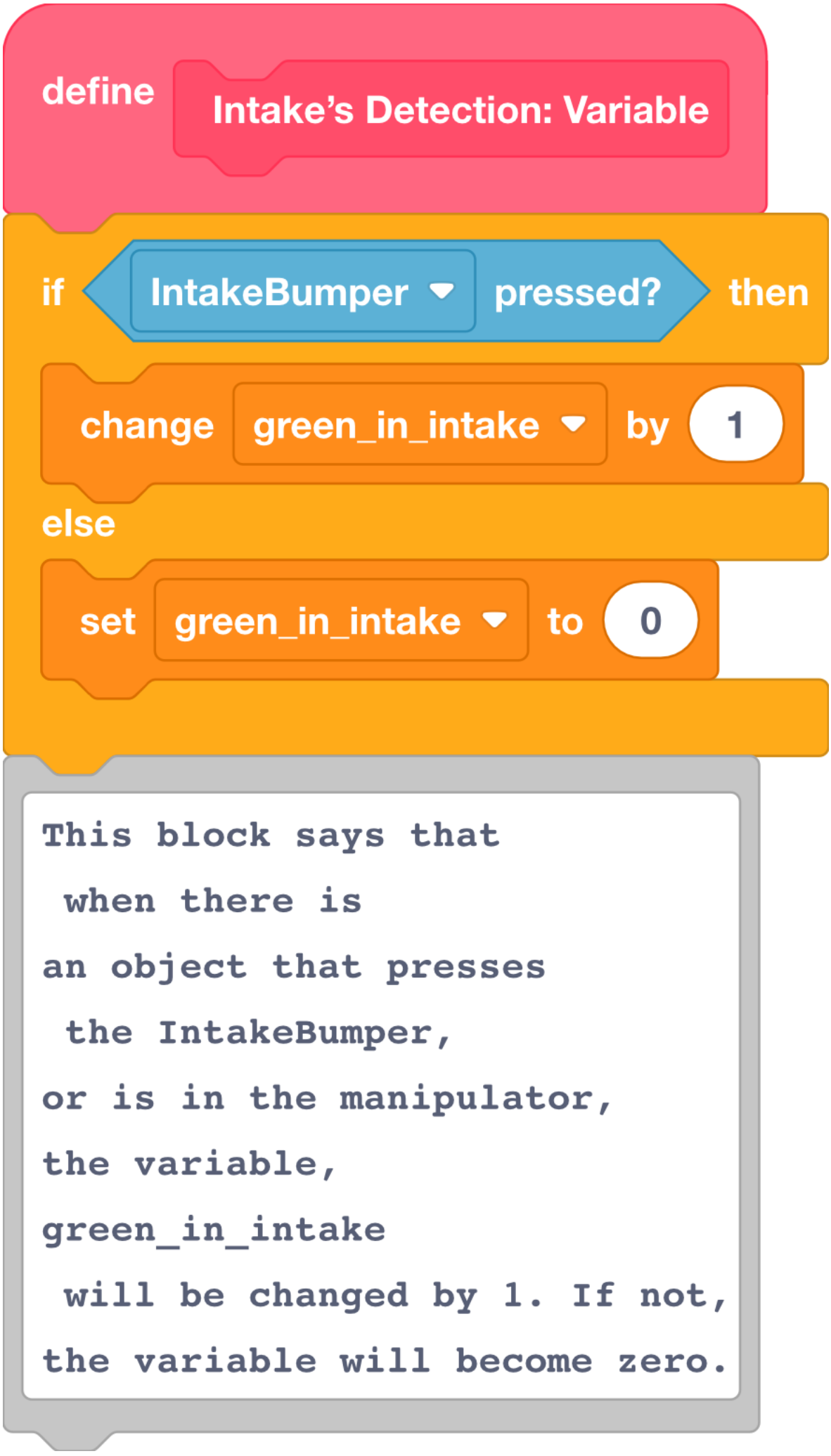
original position before it ran the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Intake's Detection: Variable
if
IntakeBumper
pressed?
then
change
green_in_intake
by
1
else
set
green_in_intake
to
0
This block says that
when there is
an object that presses
the IntakeBumper,
or is in the manipulator,
the variable,
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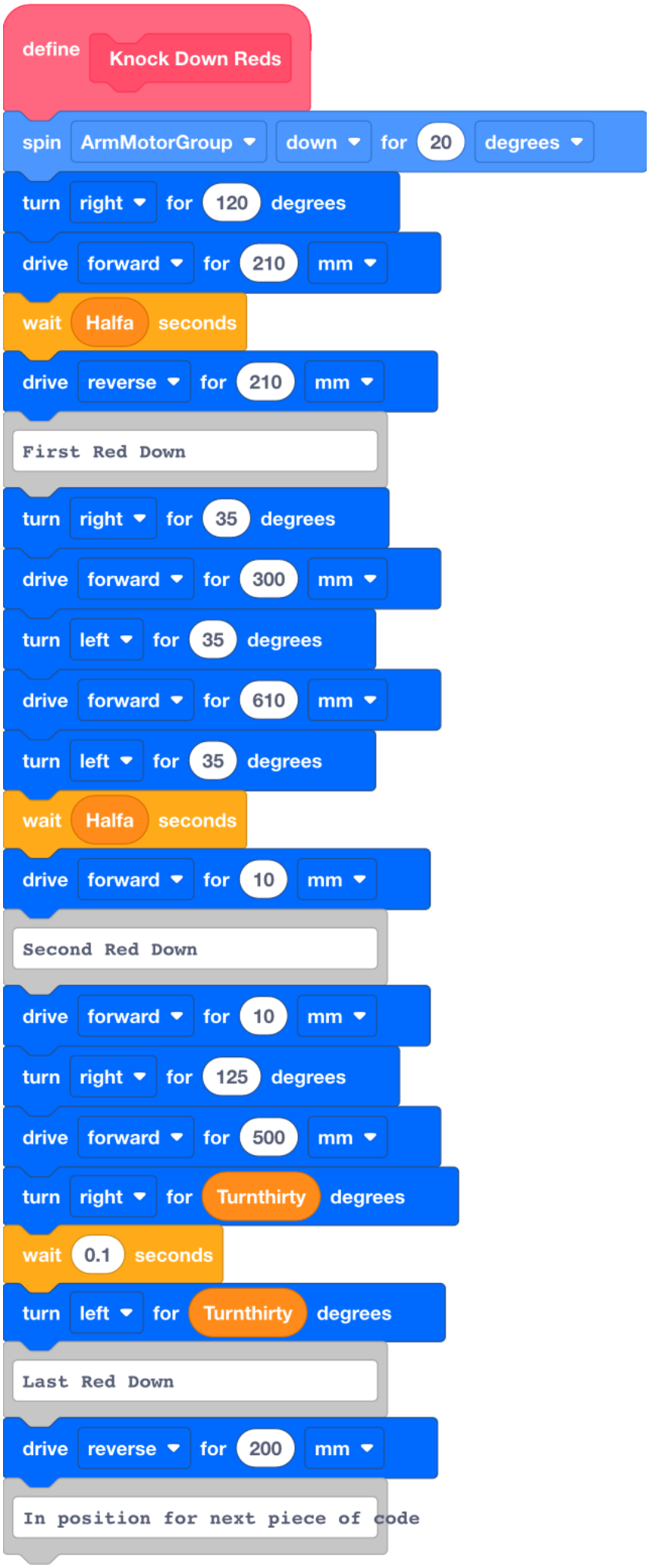
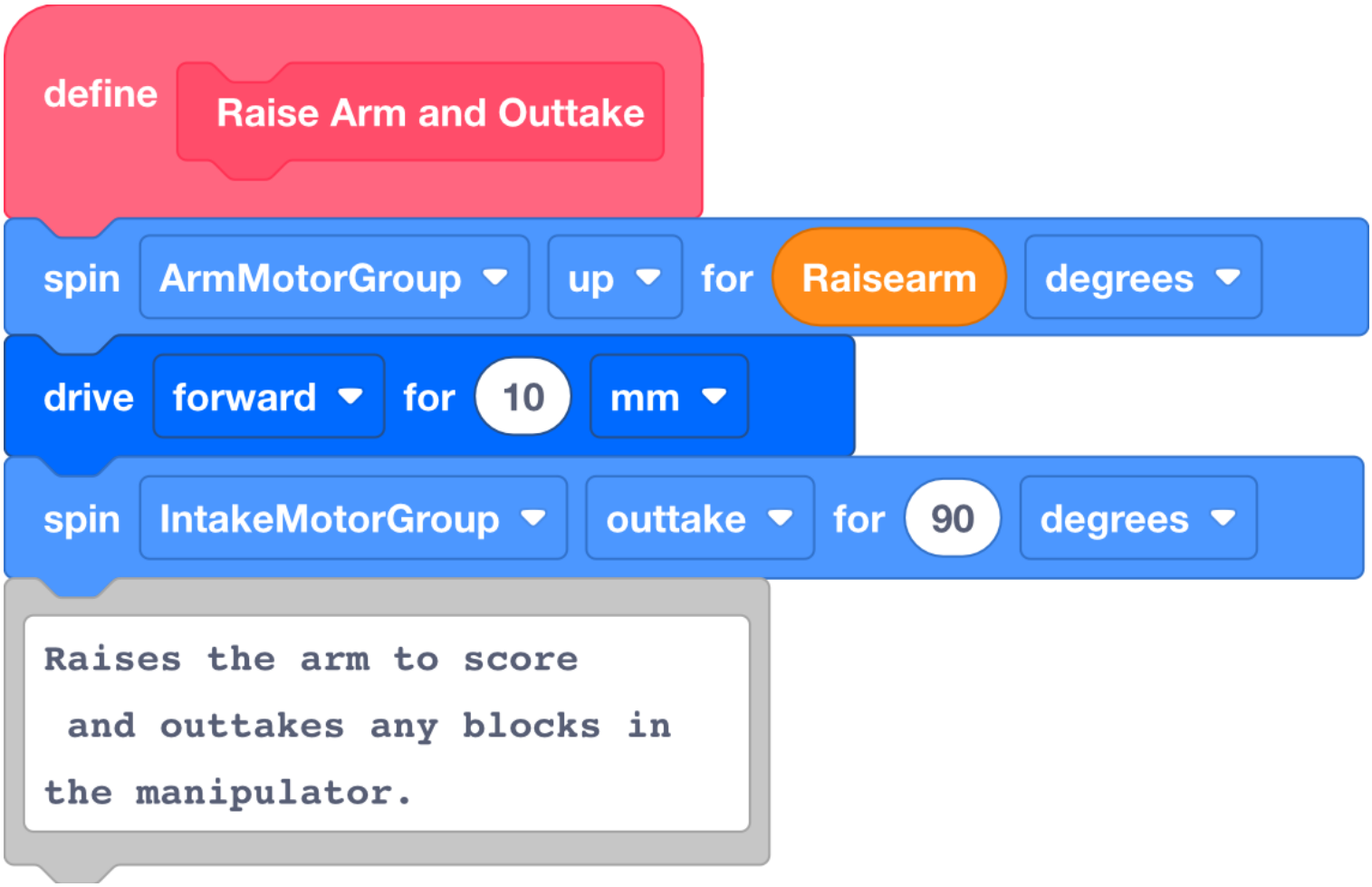
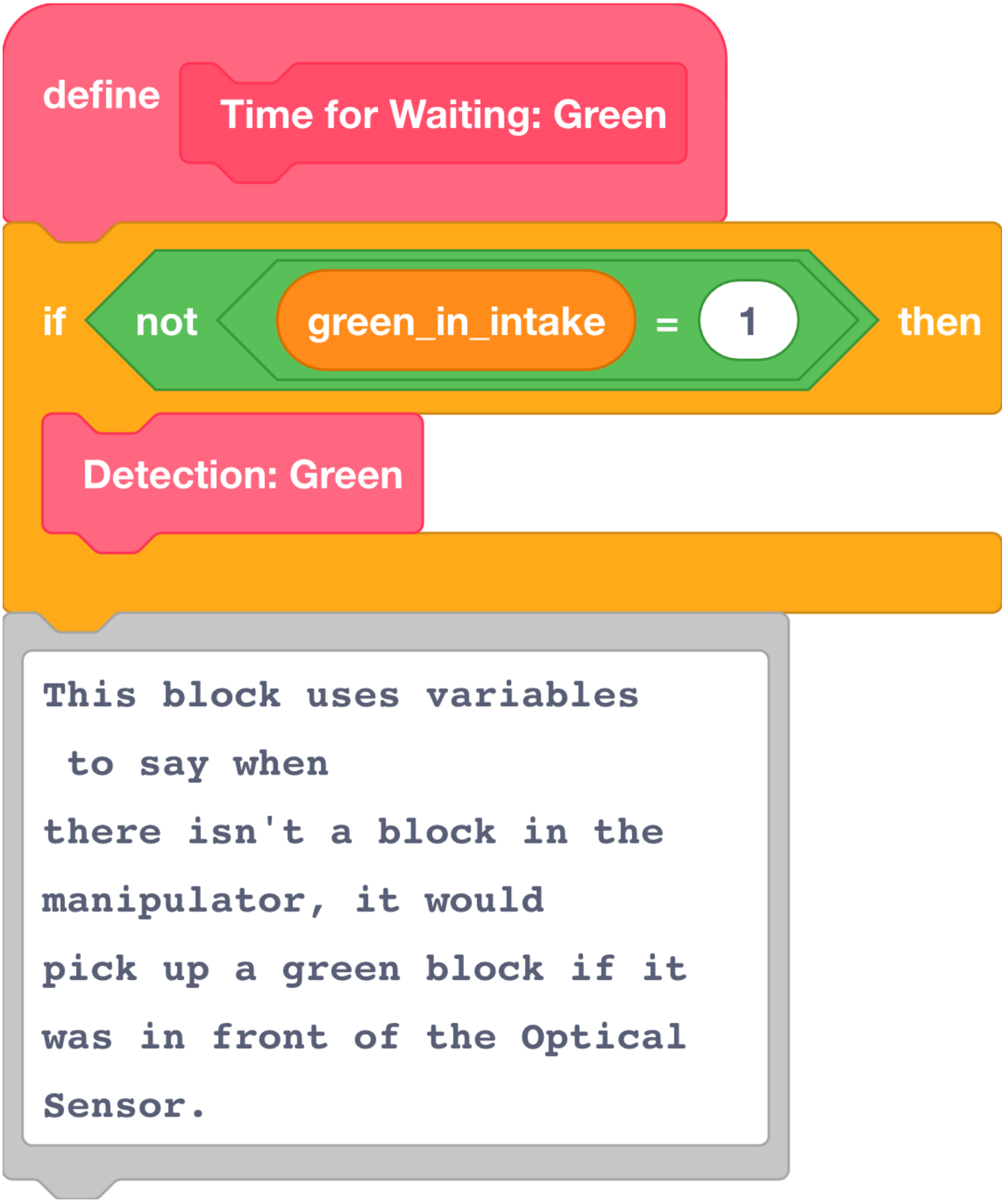
will be changed by 1. If not,
the variable will become zero.


define
Knock Down Reds
spin ArmMotorGroup down for 20 degrees
turn right for 120 degrees
drive forward for 210 mm
wait Halfa seconds
drive reverse for 210 mm
First Red Down
turn right for 35 degrees
drive forward for 300 mm
turn left for 35 degrees
drive forward for 610 mm
turn left for 35 degrees
wait Halfa seconds
drive forward for 10 mm
Second Red Down
drive forward for 10 mm
turn right for 125 degrees
drive forward for 500 mm
turn right for Turnthirty degrees
wait 0.1 seconds
turn left for Turnthirty degrees
Last Red Down
drive reverse for 200 mm
In position for next piece of code


define
Raise Arm and Outtake
spin
ArmMotorGroup
up
for
Raisearm
degrees
drive
forward
for
10
mm
spin
IntakeMotorGroup
outtake
for
90
degrees
Raises the arm to score
and outtakes any blocks in
the manipulator.


define
Time for Waiting: Green
if
not
green_in_intake
=
1
then
Detection: Green
This block uses variables
to say when
there isn't a block in the
manipulator, it would
pick up a green block if it
was in front of the Optical
Sensor.